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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/069,011	03/14/2002	William John Macklin	MACKLIN-03211	4530

7590 01/11/2005

Law Offices of William H. Holt  
12311 Harbor Drive  
Woodbridge, VA 22192

EXAMINER
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MERCADO, JULIAN A

ART UNIT	PAPER NUMBER
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1745

DATE MAILED: 01/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	10/069,011		MACKLIN ET AL.	
	<b>Examiner</b>		<b>Art Unit</b>	
	Julian Mercado		1745	

**– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –**  
**Period for Reply**

**A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.**

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on 25 October 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                         |                                                                             |
|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____                                                |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____                                                             | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Remarks***

This Office action is responsive to applicant's amendment filed October 25, 2004.

A new ground of rejection is set forth in this Office action, which is made NON-FINAL.

### ***Claim Objections***

The objection to claim 1 has been withdrawn.

The examiner notes that the specification is replete with the term "aluminium" instead of --aluminum--. See, for example, page 2 line 23-27. An objection to the specification is withheld in view of this term being recognized as the British spelling of aluminum and in view of applicant's compliance with the examiner's objection to the claim for the same.

### ***Claim Rejections - 35 USC § 112***

The rejection of claims 1-6 under 35 U.S.C. 112, first paragraph, has been withdrawn.

The examiner acknowledges applicant's clarification that the claimed "alloy" includes both conventional alloying and "reversible" lithium/elemental compound alloying.

### ***Claim Rejections - 35 USC § 103***

The rejection of claims 1 and 4 under 35 U.S.C. 103(a) based on Che et al. and Green et al., and the rejection of claims 2, 3, 5 and 6 when further in view of Saidi, have each been withdrawn.

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The examiner acquiesces with applicant's arguments. Specifically, the Fe metal in Che et al. is understood to be a catalytic metal for effecting the high ordering of graphitic carbon nanotubes; the metal is not disclosed nor suggested as reacting, intercalating or alloying with lithium.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

New rejection:

Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyabashi et al. (U.S. Pat. 4,945,014) in view of Ikeda et al. (U.S. Pat. 5,879,836)

Miyabashi et al. teaches a lithium cell in which the carbonaceous material contains a metal such as aluminum, tin or silicon, which is capable of forming an alloy with the lithium active material. (col. 4 line 48 et seq., col. 2 line 66 et seq.)

While Miyabashi et al. teaches that the carbonaceous material is desirably a fiber or rod (col. 5 line 49-56), the patentees do not explicitly teach carbon nanotubes for the material. However, Ikeda et al. teaches interconnected carbon fibril nanotubes. (col. 2 line 6-19 and line 60-64) The skilled artisan would find obvious to modify Miyabashi et al.'s invention by employing carbon nanotubes for reasons such as increasing the conductivity of the electrode body. (Ikeda et al., *ib*)

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As to the nanotubes having the metal "contain[ed] within them", the prior art is considered to teach this feature to the extent that the carbonaceous material contains the metal within its network of fibers as a dispersion. (col. 2 line 66 et seq., col. 16 line 59 et seq.) A fair reading of applicant's specification appears to be drawn to the metal or metalloid being contained within a hollow internal portion of the nanotubes, however, the claims have been given its broadest reasonable interpretation which is not considered to preclude the metal or metalloid being contained within a network of carbon fibril nanotubes.

### *Conclusion*

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Pat. 6,090,363 to Green teaches carbon nanotubes filled with a metal. U.S. Pat 6,280,697 B1 to Zhou et al. teaches carbon nanotubes in lithium cells.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julian Mercado whose telephone number is (571) 272-1289. The examiner can normally be reached on Monday through Friday.

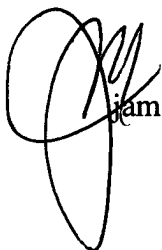

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan, can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

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system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

A handwritten signature in black ink, appearing to be "Jam" or similar, with a large loop on the left side.A handwritten signature in black ink, appearing to be "Patrick Joseph Ryan", with a large loop on the left side.

**PATRICK JOSEPH RYAN**  
**SUPERVISORY PATENT EXAMINER**